bdp-12SDHD-3U
Single Input, Dual Output SD/HD Broadcast Development Platform
Product Specification
April 15, 2006

DESCRIPTION

The Angstrom Microsystems bdp-12SDHD-3U is a Single Input Channel, Dual Output Channel Broadcast Development Platform for 525/59.94Hz and 625/50Hz SD television systems and for 1080i/59.94Hz, 1080i/50Hz, 720p/59.94Hz and 720p/50Hz HD television systems. It is designed to offer Windows XP application developers and system designers for the professional broadcast market a highly integrated and cost-effective software applications and I/O platform based on AMD's state-of-the-art 64-bit dual-core Opteron CPUs and Matrox's multi-channel XMIO I/O cards. It also supports system expandability via easily accessible PCI-X and PCI Express slots.

It supports uncompressed YUV video I/O for SD and HD, and Matrox's MPEG-2 and DV codecs for SD and HD. Digital audio I/O is uncompressed AES. I/O signals are SMPTE-259M SDI compliant with support for up to eight embedded AES pairs per video I/O. Uncompressed VBI line support is also available. An LTC Input is provided via an optionally available LTC Reader to RS-232 Serial Port adapter.

The bdp-12SDHD-3U natively supports YUV 4:2:2 uncompressed 10 and 8-bit video I/O. The software-based MPEG-2 and DV codecs support a variety of profiles and bit-rates for SD and HD. Video streams are formatted as AVI files. AES digital audio pairs are supported using 16, 20 or 24-bit sampling. Each AES pair is formatted as a WAV file. Also, sixteen lines of uncompressed VBI are supported per field for record or play of Vertical Blanking test or data signals.

D10 codecs for SD and HDV codecs for HD are also supported.

Each bdp-12SDHD-3U input and output is a fully-independent SDI/HD-SDI I/O. An analog blackburst or tri-level input is used to genlock the video outputs to an external video reference. Each output can be independently timed to the external reference.

Each bdp-12SDHD-3U is equipped with two Gigabit Ethernet ports for connecting to remotely-mounted CIFS file systems. Two USB ports are available for attaching low-speed peripheral devices.

Available expansion slots include multiple PCI-X and PCI Express slots for support of Fibre Channel or Infiniband Host Channel Adaptors for external networking or RAID Controllers for internal SATA RAID arrays.

The bdp-12SDHD-3U is housed in a 3RU rack-mount enclosure with dual, hot swappable 7200RPM SATA disk drives and dual, hot-swappable power supplies. In addition to Windows XP Pro, it supports Matrox's XMIO SDK for applications development. The XMIO SDK provides many video functions such as compositing, color correction, chroma/luma/linear keying, fade/dissolve/wipe, graphic overlay, pan/scan, logo insertion, slow-motion and numerous other effects. This software development environment, along with the robust capabilities of AMD's 64-bit dual-core CPUs and the system expandability available via the open PCI bus slots, make the bdp-12SDHD-3U the ideal solution for application and system developers targeting television networks and stations, cable networks, satellite uplinks, postproduction suites and any other professional broadcast facilities.

HARDWARE SPECIFICATIONS

Chassis Type	3RU, Dual 500W Power Supply, hot-swappable
CPU	Dual AMD 2.6GHz Dual-Core Opterons
Memory	4GB, 400Mz DDR, Registered, ECC
Hard Disks	Two 80GB SATA, 7200RPM, hot-swappable
RAID Configuration	RAID 0 or 1
Removable Media	24x CD-ROM
Audio/Video I/O Board	Matrox XMIO/12/8000, 1-SDI/HD-SDI in, 2-SDI/HD-SDI out
LTC Reader to RS-232 Serial Port Adaptor (option)	Miranda Little Red
PCI Express Slots Available	One x16 One x4
PCI-X Slots Available	One PCI-X 133/100MHz (shared PCI bus segment with Matrox XMIO card) One PCI-X 100/66MHz
PCI Slots Available	One PCI 2.3 compliant, 5V tolerant, 32-bit/33MHz

SOFTWARE SPECIFICATIONS

Operating System	Microsoft Windows XP Professional SP2
Development Software	Matrox XMIO SDK

I/O SPECIFICATIONS

Video Input	One SDI per SMPTE 259M, 75 Ohm BNC Connector or One HD-SDI per SMPTE 292M, 75 Ohm BNC Connector
Video Output	Two SDI per SMPTE 259M, 75 Ohm BNC Connectors or Two HD-SDI per SMPTE 292M, 75 Ohm BNC Connectors or One SDI per SMPTE 259M, 75 Ohm BNC Connector and One HD-SDI per SMPTE 292M, 75 Ohm BNC Connector
Audio Input	Up to Eight Embedded AES Pairs per SDI Input per SMPTE 272M
Audio Output	Up to Eight Embedded AES Pairs per SDI Output per SMPTE 272M
Time Code Input	VITC via SDI
Time Code Output	VITC via SDI
LTC Input	Balanced or Unbalanced, 75 Ohm BNC Connector via optional Miranda LTC Reader to RS 232 Serial Data Adaptor
Reference Input	Analog Black Burst or Tri-level Sync, 75 Ohm BNC Loop Through Connectors
Network	Dual 1000BaseT Ethernet, RJ45 Output Connectors
Peripherals	One RS-232 Serial Port, Two USB 2.0 Ports One VGA Connector PS/2 Mouse and Keyboard Connectors

FUNCTIONAL SPECIFICATIONS

Video Standards	525/59.94Hz, 625/50Hz, 1080i/59.94Hz, 1080i/50Hz, 720p/59.94Hz, 720p/50Hz
Video Quantization	10 or 8-bit
Video Codecs	SD/HD: Uncompressed 10 or 8-bit YUV 4:2:2 SD-only: MPEG-2 Long GOP 4:2:0 Profile up to 15Mb/s SD-only: MPEG-2 Long GOP 4:2:2 Profile up to 50Mb/s SD-only: MPEG-2 I Frame-only 4:2:0/4:2:2 Profile up to 50Mb/s HD-only: MPEG-2 I Frame-only 4:2:0/4:2:2 Profile up to 300Mb/s D10: 30Mb/s, 40Mb/s, 50Mb/s HDV DV, DVCAM, DVCPro, DVCPro50, DVCPro100
Audio Sampling Frequency	48KHz
Audio Quantization	16bit, 20bit or 24bit
Audio Codecs	Uncompressed, up to Eight AES Pairs per Video I/O
Vertical Blanking Interval	Up to 16 Lines Uncompressed per Video Frame
Stream Multiplexes	AVI for Video Stream WAV per AES Pair HDV TS
Remote File System	Common Internet File System (CIFS)

CHASSIS SPECIFICATIONS

Size	3RU Rackmount, 5.2”H x 16.9”W x 26”D (132mmH x 430mmW x 660mmD)
Weight	Approximately TBD lbs (TBD kg)
Operating Temperature	10C to 30C
Humidity	5% to 95% RH, non-condensing, 2000 meters
Power	100 - 240VAC, 60 - 50Hz, TBD A
Certifications	UL, FCC Class A, CE